

# portable ac/dc suction pump



USER'S MANUAL

**REF. 18605**



[www.drivemedical.com](http://www.drivemedical.com)

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## CAUTION

Federal law restricts this device to sale by or on order of a physician, or any other practitioner licensed by the law of the State in which he practices to use or order the use of this device.

## NOTE

 Check ALL parts for shipping damage. If shipping damage is noted, DO NOT use. Contact medical equipment provider for further instruction.

# safety information

## 1. SAFETY INFORMATION

When using electrical products, especially when children are present, basic safety precautions should always be followed. Read all instructions before using.

Important information is highlighted by these terms:

### DANGER

Urgent safety information for hazards that will cause serious injury or death.

### WARNING

Important safety information for hazards that might cause serious injury.

### CAUTION

Information for preventing damage to the product.

### NOTE

Information to which you should pay special attention.

read all user's manual before using.

save user's manual

### DANGER

To reduce the risk of electrocution:

1. Do not use while bathing.
2. Do not place or store product where it can fall or be pulled into a tub or sink.
3. Do not place in or drop into water or other liquid.
4. Do not reach for a product that has fallen into water. Unplug immediately.

### WARNING

To reduce the risk of burns, electrocution, fire or injury to persons:

1. Close supervision is necessary when this product is used by, on, or near children or invalids.
2. Use this product only for its intended use as described in this guide.
3. Never operate this product if:
  - a. It has a damaged power cord or plug.
  - b. It is not working properly.
  - c. It has been dropped or damaged.
  - d. It has been dropped into water.
4. Keep the power cord away from heated surfaces.
5. Never use while drowsy or asleep.

NOTE: Item 18605 series is factory equipped with an internal rechargeable battery and all information regarding battery operation in this guide is applicable.

# safety information

## SPECIFIC WARNINGS

TO REDUCE THE RISK OF ELECTRICAL SHOCK OR INJURY TO PERSONS, DO NOT DISASSEMBLE THIS UNIT. DISASSEMBLY OR ATTEMPTED REPAIRS IF ACCOMPLISHED INCORRECTLY CAN CREATE ELECTRICAL SHOCK HAZARD. ONLY QUALIFIED TECHNICIANS SHOULD PERFORM SERVICING OF THIS SUCTION UNIT.

## DANGER

The AC/DC Portable Suction Pump is a vacuum suction device designed for the collection of nonflammable fluid materials in medical applications only. Improper use during medical applications can cause injury or death.

For all medical applications:

1. All suctioning should be done in strict accordance with appropriate procedures that have been established by a licensed medical authority.
2. Some attachments or accessories may not fit the tubing supplied. All attachments or accessories should be checked prior to use to assure proper fit.

## INTERNATIONAL TRAVEL

Item # 18605 is equipped with a switch mode power supply allowing operation on any AC voltage (100-240 VAC, 50/60 Hz). However the correct power cord must be used to connect to adaptable wall power.

## INTRODUCTION

Your Drive Suction Unit is a compact medical suctioning device which has been designed for reliable, portable operation. Because of the small size, light weight and DC operation, the Drive Suction Unit is ideal for providing suction in the home, in transport with optional DC cord, or if your model has an internal rechargeable battery, the unit can be operated anywhere. One 800cc canister bottle is the only choice. Following the recommended operating and maintenance procedures outlined in this instruction guide will maximize the life of this product.

# safety information

## **WARNING**

Proper operation of this product is necessary to avoid physical harm. Improper use can cause personal injury and/or tissue damage. This product should not be used unless the operator has been instructed by a physician or other qualified health care professional.

## introduction

### Features:

- New anti-bacteria filter design helps prevent contamination.
- High quality vacuum regulator and anti-vibration vacuum gauge setting.
- Oil-less, permanent lubrication.
- Collection bottle with overflow protection.
- Superior performance and high reliability for continuous operation design.
- Easy carry and easy cleaning.

Following the recommended operating and maintenance procedures outlined in this user's manual will maximize the life of this product. Refer to the diagrams on page 6.

## **NOTE**

This unit complies with electromagnetic compatibility standards as defined in the attached declaration of conformity.

# illustration of important parts

## Item # 18605

1. Bacteria filter (non-sterile)
2. 4" Connection tubing
3. Vacuum gauge
4. Tubing connector
5. Vacuum regulator knob
6. DC power input (on side)
7. Power switch
8. 6' patient tubing
9. 800cc disposable canister w/lid (float shut off incorporated into lid)
10. 90° connection elbow

# set up & operation

## IMPORTANT OPERATION AND BATTERY INSTRUCTIONS:

Your 18605 portable suction machine is capable to run on AC or DC power. To ensure full function of this unit, the battery must be completely charged before the first use. Do not turn on the unit before the battery is completely charged. It takes approximately 1.5 hours to fully charge the unit. Charge the unit when battery levels are low to ensure proper operation.

## TUBING AND FILTER CONNECTIONS

1. Connect either end of the 4" tubing to the tubing connector then connect the other end to the bacteria filter. Ensure that the clear side of the bacteria filter is toward elbow and bottle when installing/re-installing. Do not reverse direction of filter.
2. The bacteria filter should then be connected to the 90° elbow connection, and the 90° connection should be connected to the top of the canister lid where it says <Vacuum>.
3. The 6' patient tubing should be connected to the canister lid at the outlet labeled <Patient>.
4. Please assure that all connections are secure and without leaks before using.
5. Verify that unit is at desired suction level before beginning patient suction.

## 7. HOW TO OPERATE YOUR PORTABLE SUCTION PUMP

Before connecting the unit to the AC adapter or 12V DC cord, make sure that the power switch located on the side of the unit is in the OFF position. Select power source desired.

### LED EXPLANATIONS:

**LOW BATTERY** – Red: Seek another power source and charge battery as soon as possible when the red light remains flashing and audio alarm sounds.

**CHARGING** – Yellow: When the battery is being charged, the yellow light on the front cover will be illuminated. At the same time, the red light on the AC adapter will be also illuminated. When the battery is fully charged, the red light on the AC adapter will turn to green.

**POWER** – Green\Yellow: When external power supplied to the unit from AC power source or DC cord, the power light will be illuminated as green. When internal power supplied to the unit from an internal rechargeable battery, the power light will be illuminated as yellow.

**AC OPERATION:** Plug the small connector of the AC adapter into the DC power input located on the side of the unit. Plug the AC end into a grounded wall-outlet power source.

**NOTE:** The power supply may become warm to the touch during charging or running of the unit. This is normal.

**12V DC OPERATION:** Plug the small connector of the DC power cord into the DC power input on the side of the unit.

# set up & operation

**BATTERY OPERATION:** To ensure proper operation from internal battery, fully charge the battery for 1.5 hours as explained in the Battery Charging section. To operate the unit from an internal rechargeable battery, ensure that no external power sources are plugged into the DC power input on the side of the unit.

Once the power source is selected, simply turn the unit on using the power switch located on the side of the unit. The power indicator light (displayed on the front of the unit) will glow yellow to show which power source is being used and glow green when an external power is connected.

## battery charging

### IMPORTANT OPERATION AND BATTERY INSTRUCTIONS:

Your 186O5 portable suction machine is capable to run on AC or DC power. To ensure full function of this unit, the battery must be completely charged before the first use. Do not turn on the unit before the battery is completely charged. It takes approximately 1.5 hours to fully charge the unit. Charge the unit when battery levels are low to ensure proper operation.

#### WARNING

If the unit does not receive an external power source or the battery does not get recharged immediately, the low battery indicator light will remain on and the performance of the unit will drop off rapidly. Switch to another power source immediately to avoid an interrupted suction procedure.

Adjust the vacuum level from 0 to 600 mmHg (0 to 60 cmHg) by turning the vacuum regulator knob located on the side of the unit (clockwise to increase vacuum and counter-clockwise to decrease vacuum). The desired level of vacuum can be set by using the gauge located on the front of the unit. To accurately read the gauge, block the patient end of the hose or cap off the collection bottle and allow the gauge to reach a stable vacuum reading.

#### NOTE

Gauge is for reference only. If the unit sustains a severe drop, accuracy of the gauge must be checked.

Suction at the patient is automatically obstructed when liquid level reaches the float shut-off located on the underside of the collection bottle lid.

#### NOTE

Always transport unit with vacuum regulator knob rotated fully clockwise in case unit is dropped.

#### CAUTION

When automatic float shut-off is activated, contents of the collection bottle should be emptied. Further suctioning could cause damage to the vacuum pump.

#### CAUTION

Should fluid be aspirated back into the unit, equipment provider servicing is necessary as possible vacuum pump damage may result.

# battery charging

## BATTERY CHARGING

On 18605 series, the units are equipped with a factory-installed rechargeable battery. The unit will have a light for low battery and charge indication.

Once you've determined that your unit is equipped with an internal rechargeable battery, connect the unit to the proper AC or DC power source using the AC adapter or DC power cord. The yellow charge indicator will be illuminated while the battery is charging. At the same time, the red light on the AC adapter will be also illuminated. Verify that this illuminates when charging begins. As the battery is fully charged, the red light on the AC adapter will turn to green.

### NOTE

A discharged battery will require a few hours (depending on depth of discharge) of charging to reach a full capacity.

### NOTE

Do not connect the AC adapter to an outlet controlled by a switch to ensure power is supplied to unit at all times.

### NOTE

Do not connect the DC power cord to an outlet that is not constantly energized.

### NOTE

A fully charged battery, on the 18605 series will provide approximately 60 minutes of continuous operation at a zero vacuum level (free flow).

### NOTE

If unit is not in use for extended periods, battery should be recharged every 6 months minimum.

### CAUTION

Discharging the battery completely will shorten the life of the battery. Do not operate the unit more than a few minutes if the low battery indicator light is lit. Recharge as soon as possible.

### NOTE

When charging the battery, the battery charging indicator light will remain lit. If your unit does not hold a charge, please be sure the model you are using has a battery installed prior to returning it to your authorized Drive Medical provider or to Drive Medical. Verify that the charge light turns on when the external power is applied with the switch in the OFF position.

### NOTE

Units equipped with an internal rechargeable battery contain a lithium ion battery which must be recycled.

# cleaning & maintenance

## Collection Bottle:

1. Shut off unit using power switch and allow vacuum to drop. Disconnect power source from the DC input receptacle on the unit.
2. With the collection bottle still in the holder, remove the lid. The bottle can now be taken out of the holder to be emptied.

## NOTE

Collection bottle should be emptied and cleaned after each use. The 800cc disposable collection bottle and lid are meant for single-patient use

3. Collection bottles and lids should be thoroughly cleaned after each use by one of the following methods:

### All Bottles:

. Wash in a hot water/dishwashing detergent solution and rinse with clean, hot tap water. Then wash in one part vinegar to three parts hot water solution. Rinse with hot tap water and air dry. Autoclave for 3 to 5 minute cycle at 270°F (132°C).

In lieu of autoclave sterilization, the above parts can be soaked in an activated dialdehyde solution.

## ⚠ WARNING

The waste in collection bottle may cause respiratory infection and must be handled according to medical waste disposing regulation. Operator must wear gloves and medical class mask before cleaning the collection bottle, tubing and handling the waste unit and/or accessories.

## Suction Unit:

1. With the power switch in the “OFF” position, disconnect the Drive Suction Unit from all external power sources.
2. Wipe the housing with a clean cloth and any commercial (bacterial-germicidal) disinfectant.

## CAUTION

Do not submerge in water as this will result in damage to the vacuum pump.

## Tubing:

1. Disconnect the tubing from the unit.
2. Tubing should be rinsed thoroughly after every use by running hot tap water through it followed by a solution of one part vinegar to three parts hot water.
3. Rinse with hot tap water and air dry.
4. Keep the outer surface of the tubing clean by wiping with a clean, damp cloth.

## Carrying Case:

1. Wipe the case using a clean cloth dampened with detergent and/or disinfectant.

# maintenance & troubleshooting

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## MAINTENANCE

Inspect suction tubing and collection bottle for leaks, cracks, etc. before each use.

## DANGER

Electric shock hazard. Do not attempt to open or remove cabinet, there are no user-serviceable internal components. If service is required, return unit to a qualified Drive Medical provider or an authorized service center. Opening or tampering with the unit will void warranty.

### Filter Changing:

1. Change bacteria filter if overflow occurs or every two months, whichever comes first.
2. Remove filter by disconnecting it from suction unit and lid assembly.
3. Replace with a clean Drive bacteria filter (non-sterile) (10/pack) and remount to suction unit and lid. Additional filters may be purchased from your authorized Drive Medical provider.

## NOTE

Do not substitute any other material for this bacteria filter. Substitution may lead to contamination or poor performance; use only Drive filters.

## TROUBLESHOOTING

**NOTE:** Your Drive Suction Unit contains no user-serviceable parts. If you believe your unit is not working properly, BEFORE YOU RETURN IT TO THE HOME MEDICAL EQUIPMENT PROVIDER WHERE YOU PURCHASED IT OR TO Drive MEDICAL, please take a few moments to check for these possible causes:

PROBLEM	ACTION
Unit does not turn on. (Green external power indicator should be illuminated when power is applied.)	<ol style="list-style-type: none"><li>1. Check power sources and connections.</li><li>2. Ensure wall outlet is live by plugging in a lamp.</li><li>3. If running from an internal battery, ensure that your unit has a battery installed.</li><li>4. If battery is installed, check that it is fully charged.</li></ol>
Pump runs, but no vacuum.	<ol style="list-style-type: none"><li>1. Check that all tubing is connected properly.</li><li>2. Check tubing connections for breaks or leaks.</li><li>3. Ensure that flow shut-off is not activated.</li><li>4. Check for leaks or cracks in bottle assembly.</li></ol>
Low vacuum.	<ol style="list-style-type: none"><li>1. Use vacuum adjustment knob to increase vacuum level.</li><li>2. Check system for leaks.</li><li>3. Push vacuum adjustment knob and then release.</li></ol>
Battery will not hold a charge. (Charge indicator should be illuminated if battery is connected during charge mode.)	<ol style="list-style-type: none"><li>1. Ensure that unit is equipped with an internal battery by contacting your Drive Medical equipment provider.</li><li>2. Verify that charge light turns on.</li><li>3. Check electrical connections during charging.</li><li>4. Ensure wall outlet is live by plugging in a lamp.</li></ol>

# specifications / classification

Size H x W x D inches (cm) .....	.14.2 x 7.0 x 8.0 (36 x 17.8 x 20.3)
Weight lb. (kg.) .....	7.3 lbs (3.3 kg)
Electrical Requirements .....	100-240 V AC 50/60 Hz .1.2 A max; 12 V DC, 36 W max
Internal Rechargeable Battery.....	Factory Equipped
Vacuum Range .....	0 to 600 mmHg (0 to 60 cmHg)
Air Flow @ pump inlet: .....	20 LPM (free flow) typical (may be less when running from internal battery)
Collection Bottle Capacity .....	.800cc (ml) Disposable
<b>ENVIRONMENTAL CONDITIONS</b>	
Operating Temperature Range .....	.32°F (0°C) - 104°F (40°C)
Operating Relative Humidity .....	0-95%
Operating Atmospheric Pressure .....	.10.2 Psi (70 kPa) - 15.4 Psi (106 kPa)
Storage & Transport Temperature Range .....	-40°F (-40°C) - 158°F (70°C)
Storage & Transport Relative Humidity .....	0-95%
Storage & Transport Atmospheric Pressure .....	.7.3 Psi (50 kPa) - 15.4 Psi (106 kPa)

## WARRANTY

18605 Series .....	Two-years limited, excluding internal battery and collection bottle
Internal Battery .....	.90-day

# specifications / classification

## APPROVALS

18605 Series ..... IEC 601-1; CAN/CSA-C22.2 No. 601.1-M90; UL 60601-1,  
IEC 60601-1-2

## EQUIPMENT CLASSIFICATIONS

With respect to protection from electric shock ..... Class I and internally powered

Degree of protection against electric shock ..... Type B Applied Parts

Degree of protection against ingress of liquids ..... IPX0 and ordinary power supply

Equipment not suitable for use in the presence of a flammable anaesthetic mixture with air or nitrous oxide.

## ISO Classification

18605 Series only - Electrically powered medical suction equipment for field and transport use according to ISO 10079-1 : 1999 High Flow/High Vacuum

18605 Series - Electrically powered medical suction equipment for non-transport use according to ISO 10079-1 : 1999

Drive Medical will make available on request circuit diagrams, parts lists, etc.

# warranty

## TWO-YEAR LIMITED WARRANTY

The compressor portion of the Drive Suction Unit 18605 Series (excluding internal rechargeable batteries) is warranted to be free from defective workmanship and materials for a period of two years from date of purchase. Internal rechargeable batteries are warranted for 90 days. Any defective part(s) will be repaired or replaced at Drive Medical's option if the unit has not been tampered with or used improperly during that period. Make certain that any malfunction is not due to inadequate cleaning or failure to follow the instructions. If repair is necessary, contact your Drive Medical Provider or Drive Medical Service Department for instructions.

### NOTE

This warranty does not cover providing a loaner unit, compensating for costs incurred in rental while said unit is under repair, or costs for labor incurred in repairing or replacing defective part(s).

**THERE IS NO OTHER EXPRESS WARRANTY. IMPLIED WARRANTIES, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO THE DURATION OF THE EXPRESS LIMITED WARRANTY AND TO THE EXTENT PERMITTED BY LAW ANY AND ALL IMPLIED WARRANTIES ARE EXCLUDED. THIS IS THE EXCLUSIVE REMEDY AND LIABILITY FOR CONSEQUENTIAL AND INCIDENTAL DAMAGES UNDER ANY AND ALL WARRANTIES ARE EXCLUDED TO THE EXTENT EXCLUSION IS PERMITTED BY LAW. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, OR THE LIMITATION OR EXCLUSION OF CONSEQUENTIAL OR INCIDENTAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.**

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Thank you for choosing a Drive Suction Unit. We want you to be a satisfied customer. If you have any questions or comments, please send them to our address on the back cover.

For Service Call Your Authorized Drive Medical Provider:

Phone \_\_\_\_\_

Purchase Date \_\_\_\_\_

Serial # \_\_\_\_\_

# warranty

## DECLARATION OF CONFORMITY

Manufacturer: Drive Medical Design & Manufacturing

99 Seaview Boulevard  
Port Washington, NY 11050

Product Designation :

Type/Model: 18605

We herewith declare that the above-mentioned product complies with the requirements of EC Directive 93/42/EEC and the following:

Class: IIa, Rule 2

Quality System Standards Applied: ISO13485

Notified Body RWTUV

MDD Annex II Applied

Safety Standards Applied: EN60601-1:2006/IEC60601-1:2005+CORR.1(2006)+CORR.2(2007)

CAN/CSA 22.2 No. 601.1-M90

UL 60601-1:2003

ISO 10079-1:1999

EMC (Electromagnetic Compatibility) Compliance to: EN 60601-1-2 (2007) [All applicable standards available upon request]



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